

# Physician Workforce Data: When the Best Is Not Good Enough

In this issue of *HSR*, the article by Rittenhouse et al. (2004) calls into question two different sources of information about physicians' decisions to leave clinical practice: data from the Physician Masterfile of the American Medical Association (AMA), and physicians' self-reported intentions to leave patient care. The authors conclude that neither source of data provided reliable information on withdrawals from clinical practice. In particular, they find that the AMA Masterfile had a sensitivity of only 9% in detecting physicians who left clinical practice during the previous three years.

One could first respond to this paper by arguing that these findings are neither new nor surprising. The low sensitivity of the Masterfile in recording changes in practice status is attributable to the long reporting lags, which on average can run as long as several years. Thus, the Masterfile cannot be expected to accurately register changes of individual physicians within a time frame shorter than the report lags.

A second, much more appropriate and compelling response is that Rittenhouse et al. point to a major shortcoming in physician workforce data. Reporting lags severely limit what we know about the current size and the geographic and specialty distributions of the physician population. Because of these reporting lags, workforce analyses overestimate both current and future physician supply. These inadequacies must be resolved so that policy analysts can properly assess the adequacy of the physician workforce to meet the nation's demand for physician services.

## REPORTING LAGS IN THE MASTERFILE

Researchers have long been aware of reporting lags in the Masterfile—and other inaccuracies as well (e.g., see Kletke et al. 2000). The Masterfile is continuously updated with information from a variety of data sources, including medical schools and graduate medical education training programs, hospitals, state licensing agencies, medical societies, specialty certification boards, and an ongoing survey of the entire allopathic physician population that collects data on physicians' professional activities. All of these updates are associated with some reporting lag. The length of reporting lags varies considerably with the type of information on which the update is based.

The AMA updates the Masterfile by creating data records for new physicians. The reporting lags for this type of update are relatively short. The AMA tracks medical students training in U.S. medical schools and posts their information onto the Masterfile at the time of their graduation. New international medical graduates (IMGs) are posted onto the Masterfile when they enter residency training. These updates are made with information from the Annual Survey of Graduate Medical Education Programs, which collects data on virtually all physicians in residency and fellowship training programs.<sup>1</sup>

On the other hand, lags are much longer for updating changes in physician practices (e.g., whether physicians provide direct patient care, whether they are still professionally active). Much of the information used to update Masterfile data on physician practices comes from an ongoing survey of the entire physician population. Physicians are sent a questionnaire every three to four years. Thus, for the Masterfile's data on physicians' practices, lags of two years are average for individual physicians who respond to the survey and can be much longer for physicians who fail to respond to the questionnaire.

Despite these reporting lags (and other inaccuracies), researchers continue to analyze Masterfile data simply because the AMA Masterfile is the most complete and authoritative source of information on the nation's supply of allopathic physicians (MDs). Similarly, the Masterfile of the American Osteopathic Association (AOA) is the most complete and authoritative source of data on the nation's supply of osteopathic physicians (DOs). Virtually all analyses of the current and future size and composition of the U.S. physician workforce are based, either directly or indirectly, on data from the AMA and AOA Masterfiles.

## THE IMPACT OF REPORTING LAGS ON PHYSICIAN WORKFORCE ANALYSES

Rittenhouse et al. examined Masterfile data to analyze physicians' departures from clinical practice, which can happen in two primary ways—retirement, or switching professional activities to nonpatient care.<sup>2</sup> Let's focus our attention on physician retirements. How do reporting lags for retirements affect physician workforce analyses?<sup>3</sup>

First, because of lags in the posting of physician retirements, the Masterfile data overestimate the current supply of active physicians. Furthermore, the delayed reporting of physician retirements on the Masterfile is reflected in the projection estimates as well, because projection models use separation

rates based on retirement and mortality data from the AMA Masterfile. Finally, the impact of reporting lags on physician supply estimates is expected to increase significantly with the aging of the physician workforce—that is, with the increasing number of physicians entering the older age categories.<sup>4</sup>

Back-of-the-envelope calculations suggest that the amount by which projection estimates are inflated may be substantial. Suppose that the average reporting lag is two years. Physicians' average worklife following residency training is approximately 35 years. Thus, the two-year reporting lag would cause the average worklife to be overestimated by 6%. Consequently, projections of physicians supply may eventually need to be discounted by a comparable percentage.<sup>5</sup>

## SUGGESTIONS FOR FUTURE RESEARCH

As we have said, physician retirement patterns will be a dominant factor affecting physician supply during the next 15 years, due to increasing numbers of physicians entering into the older age categories. To make useful policy recommendations, physician workforce planners need to have accurate data on current and projected physician supply and to have a better understanding of how future physician supply will be affected by physician retirement patterns. Research is needed in the following three areas.

First, we need more information about the extent to which reporting lags on the Masterfile affect estimates of current and projected physician supply. The Rittenhouse et al. analysis and the discussion above indicate that current and projected estimates of physician supply are too high. Thus, we need research on how much current and projected supply estimates should be deflated. This deflation factor should play a prominent part in the ongoing debate about whether the future supply of physicians in the U.S. will be sufficient to meet the nation's demand for physician services (Cooper et al. 2002; Weiner 2002; Blumenthal 2004).

Second, we need a better understanding of the various factors affecting physician retirement decisions. We need better information about who is retiring. To what extent do physicians' gender, practice type, and increases in malpractice premiums affect retirement or decisions to withdraw from clinical activity? Do physician retirement rates vary by census region and community size? Does the average worklife of women physicians differ from male physicians? To what extent are physicians' retirement decisions affected by changes in the local and national economies?

Third, we need research on whether physician retirement rates have changed over time. What impact would such changes have on the future supply of active physicians? Will existing data allow researchers to distinguish between changes in physician retirement rates and a change in procedures used to update the Masterfile?

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## NOTES

1. All states require IMGs to complete at least one year of residency training to be eligible for medical licensure. See: <http://www.ama-assn.org/ama/pub/category/1555.html> (accessed July 26, 2004). The Annual Census of Graduate Medical Education is an electronic survey of accredited residency programs that is conducted jointly by the AMA and the Association of American Medical Colleges (AAMC). The survey response rate is consistently over 95%. Further mailings allow the final updating information for 99.5% of residency programs. See: <http://www.ama-assn.org/ama/pub/category/2674.html> (accessed July 26, 2004).
2. Nonpatient care activities include administration, medical education, medical research, and other nonpatient care activities. For simplicity, this discussion ignores physicians who are deceased, temporarily inactive, or semi-retired.
3. Some analyses are less seriously affected than others by reporting lag bias. For example, lags in the recording of changes in physicians' locations may cause relatively little bias in the Masterfile data for the number of physicians practicing in a community. This is because lags in recording the location changes for physicians entering the community are offset by lags in recording location changes of physicians leaving the community. On the other hand, reporting lags are more problematic for retirement, which are unidirectional—or nearly so. Reporting lags for this transition are unlikely to be compensated for by reporting lags for transitions in the opposite direction—that is, retired physicians returning to active practice.
4. The shifting age-composition of the physician population is the result of changes in physician workforce policies over 35 years ago. During the 1960s, there was a general consensus that the supply of U.S. physicians was woefully inadequate to meet the nation's future health care needs. In response, state and federal governments instituted policies that more than doubled the number of new entrants to the physician workforce during the 1970s and early 1980s. Now, in 2004, the number of physicians entering the retirement ages is projected to more than double in the next 10 to 15 years.
5. Actually, the relationship between the percentage overestimates in physicians' average worklife and in the projected active physician supply is complex. It is affected by the skewness of the physician age distribution, the composition of the physician population (e.g., sex distribution, specialty distribution, etc.), and the degree to which these factors change over time.

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